

The Maryland Fruit Grower

WM. L. AMOSS,
BENSON,
MARYLAND



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By

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Number 2

Here is a new economy spray!



A LATE Delayed Dormant Spray

SCALECID 1-50 and SULFOCID 1-150

Many apple growers have their orchards so free of scale that were it not for aphids, red mite and a few minor pests, they could omit the dormant spray altogether.

This new spray—the late delayed dormant—takes the place of the dormant or delayed dormant and the prepink spray as well, at a considerable saving in cost.

This late delayed dormant spray has unique advantages.

First—Both the advantages of an oil spray and a sulfur spray.

Second—Cheaper than delayed dormant lime sulfur—as low as cheap oil sprays.

Third—A combination that will kill every aphid you hit, also for red mite and other soft bodied insects hatching at that time.

Fourth—Greater safety through the use of weaker dilutions of proven safe materials. No chances of ruining valuable trees with cheap oil sprays.

Fifth—Application at a time when insects are more easily controlled than at the delayed dormant period.

Follow this spray with Scalecide 1 to 100 and Sulfocide 1 to 200 as a pink spray making lime sulfur and nicotine unnecessary and bring your crop up to the blossom period in the finest possible shape at the least cost. You will like these sprays.

Write Department F, B. G. Pratt Company, 50 Church Street, New York, for further information of these sprays and new 1932 prices on Scalecide—the lowest in 15 years.

CONTROLLING APPLE SCAB WITH MILD SULPHUR SPRAYS

H. C. YOUNG

Chief, Department of Botany and Plant Pathology Ohio Agricultural Experiment Station, Wooster, Ohio.

There are two general types of sulphur fungicides, namely, the chemically combined sulphurs and those that are simply mechanically mixed. The most important member of the first type is lime sulphur. This compound is made by boiling together approximately 2 parts of sulphur and 1 part of hydrated lime in water. The product formed is calcium sulphide, a highly caustic and unstable compound which, when sprayed on the tree, rapidly decomposes into elemental sulphur along with several other compounds. The sulphides are highly fungicidal, and the elemental sulphur formed in their decomposition adds to the lasting effectiveness of the spray.

While sulphides of sulphur are very effective in controlling apple scab and several other apple diseases, they cause considerable injury to foliage and fruit. The injury is decidedly variable. That is, a grower may use lime sulphur for several seasons and obtain but little injury, and then for no apparent reason suffer considerable loss from injury. Cases of injury seem to be increasing until at present liquid lime sulphur is considered somewhat dangerous, particularly in post-blossom sprays.

It is because of these frequent chances in injury with liquid lime sulphur that an earnest search has been in progress to find safer sprays. The uncombined sprays are safe usually, but in general, have not been effective enough in controlling disease. Consequently, the grower had to decide which loss would be less, namely, loss from disease or loss from injury.

The first real development in remedying this situation was the use of dilute lime sulphur sprays. It was also found that the dry lime sulphur caused less injury than the liquid. Then, by diluting the dry lime sulphur, particularly for the post-blossom period, a fairly safe and effective spray was devised. At present, the recommended strength of dry lime sulphur for pre-blossom spraying is 7 pounds to 100 gallons of water. The strength of post-blossom applications may vary from 4 to 6 pounds per 100, this being governed entirely by the severity of scab.

It has been found that when dilute lime sulphur and arsenate of lead are mixed together a reaction is set up in which free arsenic is formed. This is one of the reasons why severe injury occurs. To stop or retard this reaction high calcium hydrated lime is effective. The spray recommendations, therefore, include 8 pounds of hydrated lime per 100 gallons of spray when arsenate of lead is used.

Lime sulphurs, when used in the above dilutions, are not always as safe as desired. Consequently, a tremendous amount of work has been done in the development of more effective wettable sulphur combinations. As indicated above, the regular peach sprays such as dry mix and its substitutes have failed in general to control apple scab, even during the mid-summer period.

As a result of these researches several new and effective wettable sulphurs have been developed. One of the most effective of these and one that

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has been tried in several states is what is known as flotation sulphur. It is made from a by-product in the manufacture of artificial gas. It is colloidal in nature, contains a trace of insoluble materials, and suspends well in water. This sulphur is sold on the market in both paste and dry form. Results from three seasons experiments indicate that the paste can be depended upon for the control of apple scab at least during the post-bloom period. The strength recommended is 6 to 8 pounds to 100 gallons of water. No lime need be added.

A comparatively new product known as colloidal sulphur was tried for the first time during the past season. The sulphur in this product is in an extremely finely divided state forming a true colloid mixture. One seasons trials indicate that it can be substituted for the lime sulphurs thruout the season. It caused no injury to foliage, and the fruit sprayed with it had excellent finish. It is compatible with arsenate of lead, summer oils, and Dutox. The control of scab was excellent and fair for Brooks spot. These results are from one seasons trials. Consequently, definite recommendations can only be made after more extensive tests. However, it is one of the most promising sulphurs that has appeared so far.

Another wettable sulphur that has given good results in 2 seasons tests is what is known as Mist Brand. It was used only in the past bloom period and at a strength of 12 pounds to 100 gallons of water. The finish on the fruit was excellent. Lime is not needed in either of these wettable sulphur sprays.

There are undoubtedly other mild sulphur sprays that may be substituted in the apple spraying program. The three mentioned above are the only ones used that were considered promising.

Probably, the most important point of this discussion is that growers need to study their spraying problems more, and substitute mild sprays whenever possible. The time seems to be rapidly passing when one type of spray can be used thruout the season, and under all conditions.

* * *

BEST USE FOR DIFFERENT VARIETIES OF APPLES

Varieties Marked * Best for Apple Pie and Dumplings

Variety	Season	Eating Uncooked	Baking	Sauce	Canned or Stewed	Jelly
McIntosh	Sept.-Dec.	Excellent	Good	Very good	Good	Good
Snow	Sept.-Dec.	Excellent	Very good	Good	Good	Good
*N. W. Greening	Oct.-Mar.	Poor	Very good	Good	Fair	Fair
*Wolf River	Oct.-Jan.	Poor	Excellent	Fair	Poor	Good
*McMahon	Aug.-Oct.	Poor	Very good	Good	Poor	Good
*Jonathan	Oct.-Mar.	Excellent	Good	Poor	Good	Good
*Grimes Golden	Oct.-Mar.	Excellent	Fair	Very good	Good	Poor
Ben Davis	Jan.-April	Poor	Fair	Good	Good	Fair
Delicious	Nov.-Mar.	Excellent	Good	Poor	Poor	Poor
*Winesap	Jan.-May	Good	Good	Poor	Good	Good
*Wealthy	Aug.-Sept.	Excellent	Good	Good	Good	Very good
Cortland	Oct.-Mar.	Good	Good	Good	Good	Fair
Golden Delicious	Oct.-Mar.	Excellent	Poor	Poor	Good	Poor

From—"Wisconsin Horticulture," Dec., 1931.

* * *

CONTROLLING THE SCALE

Scale marks on fruit mean that the scale insect is out on the tips of the branches. Good control can be had only by thorough application of a dormant or delayed dormant spray. Wet the entire tree right out to the ends of the branches. Scale is increasing in many orchards. Stop it by careful spraying.

SOME STUDIES ON THE COST OF SPRAYING

C. W. ELLENWOOD,

*Assistant Horticulturist,**Ohio Agricultural Experiment Station, Wooster, Ohio.*

The orchardist this year is primarily interested in reducing operating costs, especially where this can be done without material and permanent injury to either the prospective crop or the orchard itself. Before setting up an economy program it is necessary to know something about the various growing costs these past few years. With this information as a basis, it is entirely possible that certain economies may be effected at least for the coming season.

Taking as an example the cost records of a block of Stayman and Delicious trees, we find that spraying has been the largest single growing cost over the past four years. For the purpose of this discussion the orchard has been reduced to an acre basis. All expenses, however, are calculated as a unit of a 55-acre orchard. The cost of spraying in this particular orchard has been more than twice as much as the cost of any other single item.

GROWING COSTS PER ACRE

	1928	1929	1920	1931	Av.	Per Cent
Spraying	38.88	60.98	46.21	31.86	44.48	27.7
Picking	11.48	14.90	24.75	22.24	18.34	11.4
Culture (plowing, cultivation, cover crop, mulch, etc.)	31.40	15.46	20.68	13.04	20.14	12.5
Pruning and disposing of brush	11.70	11.30	15.60	13.60	13.05	8.1
Grading	5.74	10.04	18.56	21.35	13.92	8.7
Interest & tax	9.61	9.88	9.96	10.06	9.88	6.1
Thinning	5.93	4.59	10.22	9.37	7.53	4.7
Fertilizer	3.72	2.07	9.51	1.78	4.27	2.7
Supervision	15.00	15.00	15.00	15.00	15.00	9.3
Miscellaneous	7.30	9.50	17.66	22.08	14.14	8.8
Total cost per acre	140.76	153.72	188.15	160.38	160.75	100.0
Production in bushels per acre	115	200	370	533		
Cost per bushel	1.23	.77	.52	.30	.71	

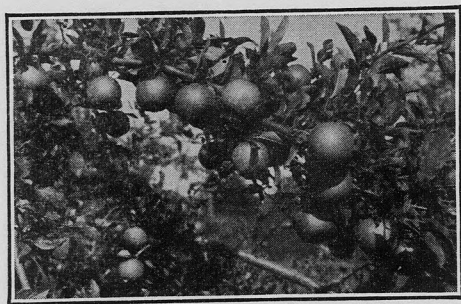
For the four year period, 1928-1931 (Table 1) spraying has represented 27.7 per cent of the total growing costs to and including harvest. Culture was second to spraying with an average of 12.5 per cent of the total cost, while picking ranked third with 11.4 per cent. Other items ranked in importance as follows: supervision, grading, pruning, interest and taxes. All of these items especially those concerned mainly with hand labor could possibly be reduced. Because of the important position spraying occupies in the total growing costs, it is likely that in many instances drastic steps will be taken to cut costs. Some growers will undoubtedly eliminate one or more applications. Others will attempt to reduce either the amount or strength of the material. It is not our purpose either to discuss the advantages or disadvantages

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IT IS GIVING SATISFACTORY RESULTS**

KOPPERS FLOTATION SULPHUR controls Apple Scab without injury to foliage . . . no russetting even with the most susceptible varieties.

KOPPERS FLOTATION SULPHUR controls Peach Brown Rot and leaves a beautiful finish on the ripened fruit.

KOPPERS FLOTATION SULPHUR, in addition to the present paste form, is also available in a dry wettable form for use in liquid sprays and a dry powder to be used as dust.

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of eliminating or weakening any particular application. In the tabular material here presented we are simply attempting to analyze some of the many items that, combined, make up the cost of spraying.

Taking as a basis of consideration a portable sprayer with a nominal capacity to deliver 30 gallons a minute and hand labor and team labor at 35 cents per hour, a supplementary water system for rapid refilling and an application of 400 gallons per hour of a modified summer spray, the costs are divided as follows for a 10-hour day:

Labor—3 men \$10.50; team, \$3.50; operation and depreciation of sprayer \$8.99; water system, \$1.75; 4,000 gallons summer spray, \$23.10. The total operating cost per day would be \$47.84.

The operation of a sprayer with a smaller capacity would have cost less but labor would have been used to less advantage. The total cost per gallon for application and material was approximately 1.2 cents. This is likely not higher than the prevailing cost in commercial orchards throughout the state. Considering first the possibility of reducing labor costs, we find that the elimination of one man, reducing the labor rate from 35 to 30 cents per hour for hand labor and to 25 cents per hour for team would represent a saving of \$5.50 per day. No doubt even greater savings in labor may be effected in certain sections. However, it should always be borne in mind that spraying requires more skill than most any other orchard operation. Spraying equipment may in some cases cost less than the figures given. However, unless prices drop radically the possible saving from this source will be a great deal less than from reduced labor charges.

The prices of spray material have remained practically stationary for the past several years. It seems reasonable to suppose, therefore, that the basic prices of all our spray materials has been stabilized and no great reduction is to be expected soon. Thus in an orchard already well equipped for rapid spraying, reduced labor costs offer almost the only hope of cutting the cost per tank of material applied. Cutting out certain applications or reducing the strength or amount of material applied per tree are other considerations, of course, but we must be careful of short cuts in spraying.

Quick coverage is not only necessary for efficient control of pests but also desirable from an economy standpoint. The economy effected from having plenty of water quickly available lies not only in utilizing labor to better advantage but also in providing insurance against outbreaks of disease and insects where quick coverage is so desirable.

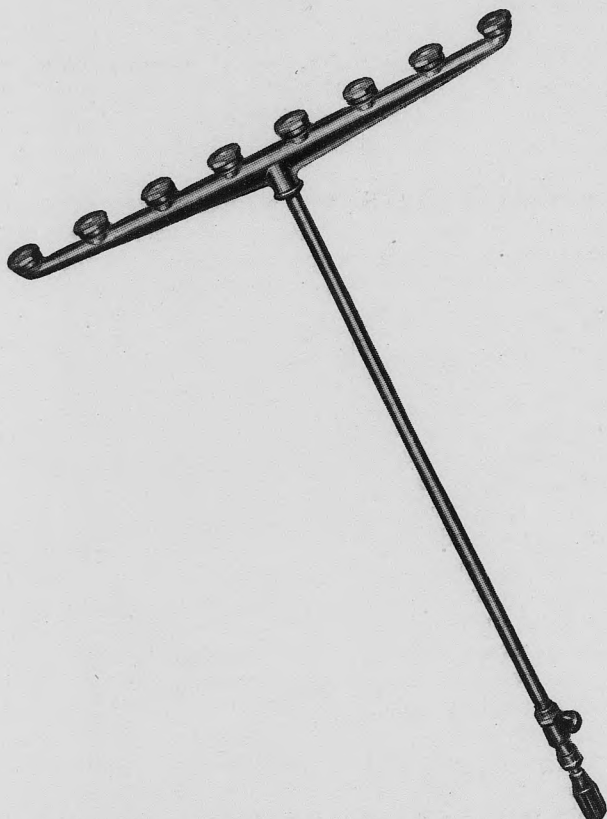
The economy due to the installation of a good water supply on this 55-acre orchard showed a saving of \$1.80 for each spraying day. Tanks elevated high enough to permit filling the sprayer by gravity are suggested whenever possible. Ponds are cheaper to install, but require the use of mechanical tank fillers.

There are possibilities of reducing spray costs by cutting down either the strength of solution or amount per tree. We are not suggesting either of these practices as a general recommendation. In many instances in Ohio, however, the strength of solution may be reduced with no appreciable impairment in results so long as the applications are thoroughly made and at the right time. From general observations we believe the amounts commonly applied per tree can rarely be reduced. It is more likely that there is an insufficient amount applied per tree to insure complete coverage. To reduce

New "Fog-Drive" Guns 3-4-6-8

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BEAN now gives you, in their fog-drive guns, a finely atomized spray which is as near 100% perfect as it is possible to make it. A spray which compares with the oldtype nozzle, made possible only when the nozzles are used in multiple as they are in this fog-drive gun and the factors of shape of the nozzle, flow of liquid, pressure and atomization are in their correct relationship.

THIS IS THE ONLY spraying device that enables you to spray from the ground or the top of the tank at a great distance and still get the same economy and coverage that would be possible if you were right up close to the tree itself with an ordinary spray nozzle.

NO BETTER SPRAYING DEVICE WAS EVER BUILT

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the amount applied per tree below the quantity needed to give complete coverage is generally less advisable than the elimination of an entire spray. The danger of economizing in the amounts applied per tree is that it leads to "half spraying" which often results in a greater net loss than had the spray not been applied.

EDITOR'S NOTE—Mr. Ellenwood's paper is not given fully. Several tables also have been omitted. It will be noted that spray labor costs are higher than those in Maryland. Hour rates for other orchard labor were not given.



APPLE SCAB AND ITS CONTROL IN THE HUDSON VALLEY

(From: 50th Ann. Report of New York (Geneva) Expt. Sta., p. 33-35, for the fiscal year ended June 30, 1931.)

Timing of Sprays.—The number of the previous year's scabby leaves overwintering and the temperature and amount of rainfall in the spring determine the severity of apple scab. The critical period for apple scab infection generally extends from the time the buds show green in the early spring until about 2 to 4 weeks after the petals fall. The number of sprays to apply and the time to put them on are constant problems of the grower.

Experiments show that in some years it is the pre-blossom sprays that are essential, while in other years it is the calyx or cover sprays. This seasonal irregularity takes the timing of the critical sprays beyond the scope of the orchardist. While growers can be advised when to spray for apple scab, it is not recommended that they follow recommendations too closely in an attempt to outguess the weather and scab development, but that they keep the susceptible host parts covered. This will permit the substitution of milder fungicides in the spray program after danger of primary infection is past. Thoroughness of coverage is very important.

Selection of Spray Material.—The selection of a fungicide is an individual problem and depends on the location and environment of the orchard, the method of orchard practice, and the successfulness of spraying programs of previous years. No single fixed schedule of applications can be recommended as the most efficient and economical for all seasons and situations. With this in mind an attempt is being made to define the merits of the more promising spray materials available.

It is evident from the experiments that lime-sulfur, lime-sulfur plus copperas, lime-sulfur and dry-mix (half and half), and dry-mix and Cal-Mo-Sul (calcium monosulfide) were equally effective in those orchards where scab had been kept under commercial control and good horticultural practices followed.

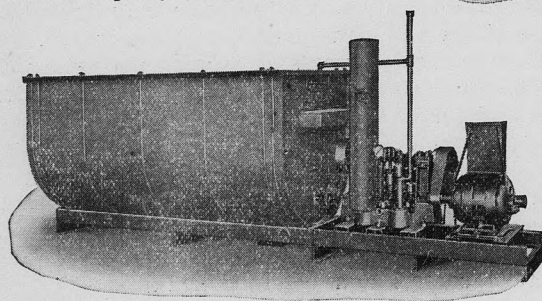
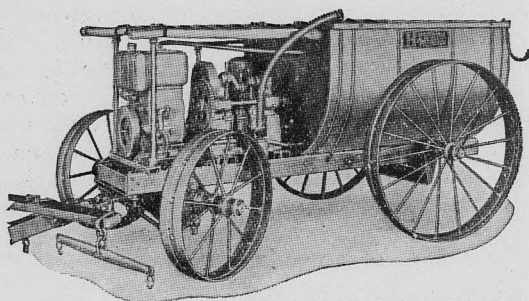
The data also shows that lime-sulfur, lime-sulfur plus copperas, and lime-sulfur and dry-mix (half and half) are approximately equally effective in situations where scab is extremely severe. Dry-mix was decidedly inferior to the spray containing lime-sulfur in these critical tests. Lime-sulfur did not seem to be materially improved by the addition of copperas. Scab lesions on the foliage were satisfactorily burned out with lime-sulfur. It would seem from the data that the best results can be obtained with the application of lime-sulfur in the pre-blossom, calyx, and perhaps the first cover sprays and



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Hardie stationary and portable spray outfits are built in a wide range of sizes. Write for the new Hardie 1932 catalog and learn what you can now get at the lowest prices Hardie capacity and pressure ever sold for.

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the substitution of milder treatments for the subsequent sprays. This practice depends on the choice of correct treatment, the timeliness, and the thoroughness of application.

Sprays Applied After Infection Periods.—The general idea in spraying practice is that effective sprays must precede and prevent infection. In view of the fact that it may be possible to control scab by applying sprays after infection periods, certain studies are being made along this line. There are data to show that scab can be controlled with lime-sulfur after infection has taken place; that is, within two days or so from the time an infection period begins. While it is evident that scab can be controlled with lime-sulfur after comparatively short infection periods, particularly on the fruit, this practice is not recommended except in emergency situations in which for some reason the spray has not been applied.

Injury vs. Spray Materials.—The quest for an effective fungicide that is non-injurious or for a material that may be used to eliminate injury is an urgent one under Hudson Valley conditions. Field trials show that the addition of copperas to lime-sulfur did not lessen the amount of injury under these conditions. Lime-sulfur and dry-mix (half and half) was effective and was decidedly less injurious than the lime-sulfur or lime-sulfur and copperas sprays. The milder treatment, such as dry-mix and Cal-Mo-Sul, caused no injury.

The amount of injury caused by the various treatments varied with the location and condition of the trees, the method of spraying, and the amount of spray applied. Altho lime-sulfur caused rather severe foliage injury, it was apparent that this was decidedly less intensified on the trees which had been well grown and were in a vigorous condition. The method of spraying caused more injury than any other one factor.



WEIGHTS OF DIFFERENT TYPES OF BASKETS

The following weights were compiled by C. L. Burkholder. The same variety of fruit was taken from the 2½ to 2¾ inch bin of a Cutler sizer. The average weight of 12 to 24 baskets in each class is given.

	<i>Continuous Stave</i>	<i>Two Hoop Tub</i>	<i>One Hoop Tub</i>
Average weight of basket and fruit.....	53 lb.	51.4 lb.	50.8 lb.
Weight of basket.....	3.2 lb.	2.7 lb.	2.5 lb.
Weight of fruit.....	49.8 lb.	48.7 lb.	48.3 lb.

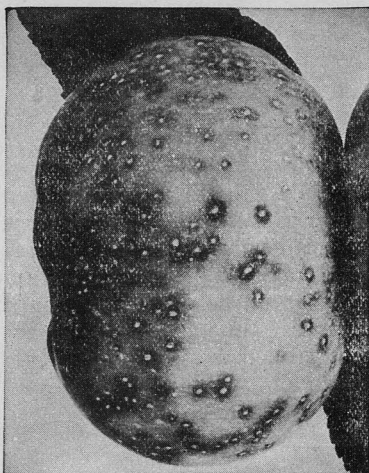
"Hoosier Horticulture," Dec., 1931.

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Danger Threatens from San Jose Scale

This insect increases quickly and State Experimental Stations are warning fruit growers to control San Jose scale this season by a dormant or delayed dormant spray.

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DENDROL Dormant Spray Oil

1. America's Scientific Miscible Oil.
2. Developed in cooperation with the Crop Protection Institute.
3. Endorsed by experiment stations in all sections of the Country.
4. An easy flowing liquid oil—not a paste form.
5. Costs less to use—two gallons with 98 gallons of water gives high control of San Jose scale—see special note.
6. Give high control of redmite.
7. A delayed dormant spray kills aphids.
8. Controls scurfy scale, oyster shell scale, cherry case bearer, etc.

SPECIAL NOTE

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A. F. Vierheller, Extension Horticultrist

THE SOUTHERN PEACH SITUATION

Mr. W. W. Oley, chief of New Jersey Bureau of Markets, writing in the January, 1932, "Pennsylvania Farmer," reports that there is a tendency toward reduced peach acreages in the South, and some change in varieties is appearing in some sections. North Georgia with 764,000 trees, 81% of which are Elberta, has but 7% of trees under 5 years of age, and only 1,000 trees are reported as planted in the past two years. Central Georgia, a heavy shipping section, has over four million trees, 72% of which are 5 to 9 years old, and 12% under 5 years. Replantings are not keeping up with trees pulled out or abandoned. The trees under 5 years are about one-fourth Elberta and one-fourth Early Rose. South Georgia with about four and one-half million trees has 29% 10 to 15 years old, and 47% 5 to 9 years old. About a million trees under 5 years old and 150,000 trees were set in 1930. Elberta is not being heavily planted here, the varieties running about 27% Elberta, 24% Hiley, 21% Early Rose, 15% Uneda and the rest early varieties.

In South Carolina, the Piedmont section in the western part of that state has set about 3,000 acres of peaches, but the Sand Hill section of that state has abandoned about as many acres, so South Carolina plantings are about stationary.

North Carolina has about one and one-half million trees left from the heavy plantings of 7 to 10 years ago. Only 92,000 trees were set out in 1925, then a four-year decline in planting, followed by about 9,200 new trees set in 1930, due to a good season that year. The varieties are, roughly, 44% Elberta, 25% Georgia Belle, 11% Hiley, 6% Hale, 4.5% Early Rose, 2.5% Red Bird, 2% Carman and 5% made up of 11 other varieties.

It is predicted that about half these trees will be properly cared for. Southern growers are watching the newer peach varieties, and if they plant many of these, it may mean a better future for northern Elbertas.

Tennessee, with 1,300,000 trees, is slowly reducing acreage, and adverse seasons have cut the crop considerably. Virginia seems to have a slow shrinkage of peach acreage. Delaware, Maryland, Pennsylvania and New Jersey show some acre reduction, and there is a tendency to get away from early varieties. Elberta, Hiley and Hale seem to be the favorites. Commercial plantings in Maryland and Delaware are decreasing slightly. The same is true of Pennsylvania, though small commercial orchards are being set near some of the larger cities. New Jersey growers seem to be waiting to see how the new varieties are going to perform before planting further. New York has had a sharp decline in trees in the past 5 years and little renewal planting.

Possibly any good effects of the shift to earlier varieties in the South will not show up for 5 years or so, and then, the shift toward early varieties may reflect better conditions in our Belle and Elberta markets in the Northeast, by moving the Southern peak back 2 to 3 weeks earlier.

The above remarks are a summary of Mr. Oley's magazine article.

ADVERTISING

Eastern apples are getting more publicity each year. Virginia growers, by a small tax per package, have been able to carry out a radio schedule and also to have a representative in English markets.

Now, six New England states have organized New England Apples, Inc., as a growers' sales agency, and have laid out a 24 weeks' radio and newspaper advertising program. The radio programs, with a high class orchestra and good singers, are sent from two radio stations. The first radio program was broadcast September 1st. The committee is composed of growers from each of the New England states and is designed to advertise New England apples.

MARKETING BY GRADE

Since the adoption of the U. S. grades for fruit, a lot of guesswork has been taken from the marketing transaction both for the grower and the buyer. Growers, generally, are becoming more proficient in packing. The January, 1932, "West Virginia Market Bulletin" reports that up to December 5, 1931, 97% of more than 4,200 cars of apples in that state met grade requirements, and 81% of the total fruit sold graded U. S. No. 1, or better.

Maryland records show that of a total of 1,244 cars inspected to November 30, 97% were in grade, and 86% ran U. S. No. 1, or better.

WATCH YOUR MILEAGE

We read recently of a farmer who had his barn a considerable distance from the house, and upon figuring up, he found that in his travels from the house to the barn, he walked in one year over 300 miles. How many miles per year do you drag your empty spray machine? Several growers have rigged up an old tank on a truck or old wagon, in which they haul water or spray material to the sprayer in the orchard. It saves time, is easier on the sprayer, and adds to the amount of spraying that can be done in a day.

A RECORD

The world's record of apple production is reported in December, 1931, "Better Fruit" magazine. Apple Lane Orchard, Quincy, Washington, packed out an average of 1008 boxes per acre, on a 157-acre orchard, in 1931. A total of 158,130 boxes were packed. The orchard contains 9,200 trees, averaging 18 to 20 years of age. Varieties are one-third Delicious, one-third Jonathan, one-sixth Winesap and one-sixth Stayman. Pollination was greatly helped by 125 hives of bees. The orchard is irrigated; has alfalfa cover crop and a stationary spray plant. Five cover sprays were used on first brood codling moth.

ECONOMY

Judge—"Well, what's your excuse for speeding 50 miles an hour?"

Jake—"Your Honor, I had just heard that my wife's church circle was going to have a rummage sale, so I was hurrying home to save my other pair of pants."

Judge—"Case dismissed."

Let Fertilizer Help Your Orchards to Pay

That orchards need complete fertilizer is shown by the following statement of Prof. J. F. Watson, Virginia P. I., in a recent issue of "VIRGINIA FRUIT":

"Those blocks in our experimental orchards that have received complete fertilizer for the past 10 years are now outgrowing and outyielding other blocks. This is explained by the greater amount of organic matter produced and eventually added to the soil" . . .

In addition to adding large amounts of organic matter, recent experiments indicate that clover and alfalfa, being deep-rooted, may take phosphorus and potash from the surface soil, where they are usually absorbed, to the lower root zones of fruit trees. Both clover and alfalfa need liberal amounts of phosphorus and potash to make a satisfactory growth.

Join the rapidly growing number of progressive orchard owners who are increasing their profits by using at least 500 pounds of complete fertilizer per acre as follows:

LEGUME SODS: 2-8-10 or 0-10-10 fertilizer

MIXED SODS: 4-8-7

GRASS SODS: 7-6-5

WHEN SEEDING: 2-8-10 or 4-8-7 (Lime as needed)

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